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AFDELING DER TECHNISCHE NATUURKUNDE

Gedeelte uit de

L E X - 1 1

U s e r ' s G u i d e

LEX-11

Introduction

Beginners Guide
Intermediate Guide
Technical Guide

Version 03.0

October 1981

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TYPE OF COMPUTER

Available for all LSI-11, PDP-11 and VAX computers running under RSTS, RT11, RSX, UNIX, TSX-PLUS or VMS, i.e., from micros to the largest VAX computer.

VIDEO SCREEN

LEX-11 features a programmable video terminal interface. It can, therefore, be interfaced to any video terminal with up, down, left and right cursor control. The auxiliary keypad of the VT100 has been programmed so that most common functions needed for word processing are carried out by a single keystroke. These keys can be reprogrammed very easily if the user has different requirements. The programmable keys of other makes of terminals can be programmed in the same manner.

WIDE SCREEN MODE

Using the advanced video option of the VT-100, one can create and edit documents which are 132 columns wide.

MENU DRIVEN

The entire system is self contained and menu driven. This means that it displays a table of options which allow you to choose which function you want to carry out by pressing one key. LEX-11 is very easy to learn and "help" menus are provided. Any menu may be altered to suit individual requirements. Therefore, if a user decides that a custom menu would be desirable the system can be modified on line and a new menu created interactively to suit the particular requirement. These modifications do not require recompilation of software; the system is designed in such a way that each menu may call an unlimited number of other menus up to a 10 layer hierarchy. The user moves from menu to menu with a single keystroke. Therefore by using this facility of LEX-11 you can implement customized systems which otherwise would have needed expensive programming.

SCREEN EDITING

Editing is simple with LEX-11. The cursor controls can take you to any point in the text to insert or delete characters, words, or whole blocks of text. Any amount of previously stored text can be called from disk and inserted. Frequently-used phrases or sentences can also be stored and recalled as simple keystores. This kind of editing facility allows you to have elementary graphics, e.g., lines, bar charts, flow diagrams or replicate pictorial figures. What you see on the screen is what you receive on your hardcopy output. The keyboard does not have to be modified, as is frequently the case in other word processing systems.

TEXT INPUT

Just set up the format you want - line length, margins, tabs, and the like - and start typing. LEX-11 handles end-of-line 'carriage returns' automatically. Lines can be longer than the width of the screen, naturally.

CUSTOM AND SINGLE KEYSTROKE FUNCTIONS

Using the auxiliary keypad of the VT-100, most of the major functions that involve several keystrokes in other word processing systems have been implemented in LEX-11 by a single keystroke. Users may alter these functions by modifying the programmable terminal interface to suit individual requirements.

The following are the commonly needed functions which are usually programmed to execute with a single keystroke:

- o Insert a blank line at the cursor position.
- o Delete a line at the cursor position.
- o Insert/delete a character at the cursor position.
- o Enter INSERT MODE. This allows you to automatically enter text and takes care of margins and performs wordwrap.
- o Exit from INSERT MODE.
- o Rejustify a paragraph on the screen.
- o Mark the left hand corner for a cut and paste operation.
- o Mark the right hand corner for a cut and paste operation and leave the text on the screen.
- o Mark the right hand corner for a cut and paste operation and remove the text from the screen.
- o Mark the right hand corner for a cut and paste operation and replace text so marked with a blank space.
- o Paste and overlay text at cursor position.
- o Automatic global replace of words throughout a document.
- o Exit from current menu to menu one level higher.
- o Advance one screen at a time through a document.
- o Swap the character at the cursor position with the character following the cursor position. This facility corrects the most common typographical error.

The programmable keys of other video terminals can be set up to function in a similar manner.

CUT AND PASTE

Paragraphs and columns may be moved anywhere in a document with ease. You can indicate a paragraph or a rectangle of text and move it, blank it out, squeeze it lengthwise or sideways, or copy it elsewhere - including into a totally different document.

SCROLL

In LEX-11 the text may be examined by continuous scroll and is not limited to displaying whole pages.

SEARCH

You can demand that LEX-11 searches through text for a particular sequence of characters, and you could request an automatic replacement every time it is found.

WORD WRAP

LEX-11 knows when there is not enough room for a word at the end of a line and features automatic word-wrap. Ragged or justified right margins may be specified. Insert and delete of both characters and lines are provided.

RULERS

The format of text being typed in is determined by the 'ruler' being used at the time. You can pre-define as many as five of these and call one up when a particular format is required: the ruler specifies the margin settings,

right-justification or not, tab stops, title centering including the ability to center column headings, the layout of the columns themselves, and decimal alignment for figures in columns. In LEX-11 the number of rulers used within a particular document is unlimited. New rulers can be defined from the keyboard on the screen. Rulers can be embedded in the text so that when editing a previously created document, ruler control is automatic. The rulers disappear from the document at print time.

AUTOMATIC TITLING AND PAGINATION

Automatic titling and page numbering are also provided. The title, page number and date may be formatted in any way to suit the user requirements. Titling and page numbering at the bottom of the page are also available.

MEMORY FILE RECORDS

In LEX-11 a memory file record may contain any number of fields defined by dictionaries. These records could relate to debtors, creditors or any kind of elaborate mailing list. Frequently used text, standard paragraphs, or rulers or sets of abbreviations may also be stored in a memory file record. Records may be inserted, changed and deleted in a screen-oriented interactive mode.

KEYSTORES

Instant recall of frequently-used text from a set of ten keystores is provided in LEX-11. Extra sets may be stored and recalled from a memory file record as desired. More importantly, command strings for formatting and calculating may be held in the same manner. A user can store frequently used keystores and recall them with a single key.

RECORD LISTINGS

LEX-11 provides various listing formats for system records. A built-in menu automatically displays titles of the formats currently available.

MASS MAILING

This integral facility can be called up from the main menu. Names and addresses are recorded in a ruled form on the screen, much like a card index, with space for contact names and notes. Subsequently all or some of the file can be referenced - including a helpful selection function. A one-off letter can also be set up for automatic insertion of the relevant name and address records, or a pre-stored letter can be used. The text of the body of standard letters is held in individual files. The memory file record contains a range of headings, specifying different contact names or a "mode of address" field such as "Fred," "Mr. Smith," or "Sir." You select a letter, the particular heading required and then type the selection criteria. LEX-11 does the rest.

FORMS

There is a user-definable forms system in LEX-11 which allows you to develop forms on the screen. You can store and recall data based on the layout of the forms. Furthermore, you can select any record based on the value of the data in any field.

SELECTION

When using LEX-11, simple commands prompt you at all stages, whether you wish to carry out a mass mailing from the name and addresses held in the memory file records or simply print lists of certain fields in the records.

CALCULATING FACILITIES

The calculator behaves just like a standard four-function pocket calculator. It can actually be used during document creation or editing, for instance to total a column of figures and insert the sum: or the terms of the calculation can be embedded in the documents so that they apply to any figures inserted at the relevant points in the text. The calculator has ten memory registers for storing partial results.

When the calculator is used in conjunction with the storage of commands, complex operations such as invoice production can easily be set up. Column-by-column multiplication can be set up which is useful for financial modelling.

BASIC GRAPHICS

Basic graphics involving line drawing and figure replication can be facilitated by store and recall of command strings. This is useful for bar charts, financial modelling and other applications requiring visual presentation of data.

DOCUMENT AND PROGRAM STORAGE

Documents are held as standard operating system ASCII files. Files can be interchanged between the DP and WP functions. An index of names and titles of documents created is kept in a catalogue in the system, LEX-11 provides one back-up file (.BAK) automatically, if required.

WHAT ARE THE PARTS OF A WORD PROCESSOR?

The essential items of equipment consist of the computer itself, with its immediate access memory and the 'peripherals', - i.e., the disk storage, the visual display screen with its keyboard, and one or more printers.

THE COMPUTER

This must be a Digital Equipment Corporation 'PDP-11 Series' computer, ranging in size from the LSI-11 micro computer and upwards through the 11/34, 11/23, the 11/24, 11/44, PDP-11/70 and finally the VAX family. It is usually in a box or cabinet and contains within itself its memory. All processing is done in this memory which connects to the larger, but slower, disk, the keyboard, the screen and the printer(s). The LEX-11 program is called into memory from the disk and tells the computer how to do word processing.

The basic functions of a computer such as finding programs on the disk and loading them into memory, checking disks for malfunction, communicating with the peripherals and many other things are carried out by a master program called the Operating System. This must be loaded into the computer immediately after turning it on via its own special loading program called the 'boot-strap.' There are 4 operating systems which roughly correspond to the size of the computer and the number of terminals. The smallest is called RT-11 and is usually used on the LSI-11 micro computer, the baby of the 11 Series. It can only control one terminal. RSTS and RSX are larger operating systems which allow multiple users. They allow each user to have his own set of files as well as his/her own terminal. VMS provides facilities similar to RSX on the large VAX computers. LEX-11 also runs under the TSX+ extension to RT-11 and the UNIX operating system.

LEX-11 is a very large program and only parts of it are held in memory at any one time. The process of bringing the right parts, or pages, into memory at the right time is handled automatically and is known as 'paging.' It is this process which enables the large and growing number of features in LEX-11 to be processed even by a micro-computer. The paging process explains why there may be a very slight delay when the user requests a particular feature which has not been used for some time, particularly if the system uses 'floppy disks.' It is necessary to have at least two floppy disks mainly so that copies of documents can be easily made, and a spare copy is available in case the original is damaged.

The minimum hardware requirement to run LEX-11 is an LSI-11/2 with EIS (extended instruction set), 56K bytes of main memory, some form of disc storage, e.g. two RX02 floppy discs, and a visual display terminal.

THE DISK

The smallest disks are called 'floppy disks.' They are interchangeable flexible disks about 8 inches in diameter permanently held in a protective cardboard envelope with suitable holes to allow the disks to be attached to disk drives. The drive rotates the disks at a fairly high speed. The strings of characters which make up a particular letter or document are held on one or more tracks around the disk very much like a gramophone record. The disk drive has a read/write head which moves in and out quickly to the desired track so that particular documents can be accessed in a fraction of a second.

The larger and faster disk drives use larger diameter 'hard disks' or 'cartridges' housed in a hard plastic cover and operate in the same general

manner but hold much more information, spin faster and have faster head movement. If two or more terminals are used, a hard disk should be used in order to provide a sufficiently fast response. There are usually some permanently mounted disks and one disk which is exchangeable.

SAFETY COPIES OF DOCUMENTS

The exchangeable disk increases the total amount of information which is immediately accessible, or 'on-line', and also allows 'back-up' or 'security' copies of documents to be taken in case of damage or malfunction of the original data. The taking of security copies of documents is mandatory in all computer systems, including word processing, since although the disks are generally reliable, the hazards of dust, power failure or operator error cannot be entirely eliminated. Careful handling of the disks, clean conditions and regular preventive maintenance by the computer supplier, including the changing of air-filters, reduce the likelihood of disk errors. The procedure for taking security copies, i.e. how often and of which disks, is one of the first decisions which should be made and implemented by the word processing supervisor.

DOCUMENT DIRECTORIES AND PRIVACY

All disks reserve a few tracks to hold a list of the document on the disk and the track on which they are stored. This is called the 'directory.' In the case of RSTS, RSX or VMS Operating Systems, a separate directory may be held for each user. Access to a particular user's files requires the entry of a 'password' so enabling privacy between users to be established.

DOCUMENT FILES

All letters and manuals or parts of manuals are generally called Document Files. They consist of nothing more than an entry in the directory which says where they are on the disk and the string of characters representing the text and embedded rulers which the operator has keyed in.

MEMORY FILE

In addition to the particular document being edited, it is necessary to have a second file connected to LEX-11 to hold a number of things which may be required in editing any file. These things include standard paragraphs and, as you will see from the LEX-11 Schematic diagram, the file directory, the menus themselves and lists of name and addresses. The latter are used for mass mailing or for record-keeping purposes. This file differs from document files in as much as it is indexed, i.e., the user can get at any particular record directly by typing in a 'key' which is then searched for in an 'index' to find the exact part of the disk which holds the desired record. This makes access virtually immediate, in contrast to having to read serially though a file for the particular record required.

VIDEO SCREEN

The Visual Display Terminal, more usually referred to as a 'video' is similar to a small television set screen, and displays the documents being typed, edited, corrected or altered. Note that we say 'display' when referring to videos and 'print' when referring to printers.

Most screens have fixed pitch allowing 80 characters to a line and 24 lines to a screen. LEX-11 requires the screen to have upper and lower case letters. The great advantage over a typewriter is that words or sentences can be deleted from the original text and new words added at any point in a line without destroying other text. Hence, the bulk of the original text is preserved and does not have to be retyped. The computer can rejustify a paragraph which has been modified (i.e., fill each line removing any gaps), displaying the result on the screen. Margins, justification and centering are handled by special lines in the text called 'Rulers.'

With LEX-11, alterations can be made anywhere on the screen, the typing position being indicated by a flashing rectangle (or underline) called the cursor. The cursor can be moved around the screen by means of four keys, marked with arrows, for up, down, left and right movement. An even more remarkable advantage of the video screen for editing is the ability to mark rectangular areas of different sizes on the screen and transfer the contents to some other part of the document or indeed to a different document. The original text can be left there, or blanked out or 'squeezed' out.

Typing on a video screen with LEX-11 can proceed in the vertical as easily as the horizontal direction providing additional flexibility. Similarly, with LEX-11 one can quickly draw lines using the hyphen and vertical bar - both available with the automatic repeat facility.

Most screens hold 24 lines of 80 characters. The most common variant is the option to have 132 characters per line. However apart from the consequent reduction in character size, it usually means reducing the number of lines from 24 to 12, unless extra storage is fitted in the terminal. This is done with the advanced video option of the VT-100, for example.

The conventional screen display shows bright letters against a dark background. Some videos can display designated areas as dark letters against a bright background, referred to as 'reverse video.' Similarly, some screens are able to make designated parts of the display blink on and off, or display with greater brightness or larger sized letters. LEX-11 can make use of these facilities if they are available.

Assuming text is already displayed on the screen additional text can be displayed by using the down-arrow key to move the cursor to the bottom of the screen - a further single depression of that key will cause all the text on the screen to move up one line and a new line of text to be displayed on the bottom line. This is said to 'scroll down' the text (by one or more lines). Carriage Return also causes the cursor to move down. There is also an 'advance one screen' key which moves the cursor down 24 lines, i.e., the depth of the screen.

The up-arrow key, when the cursor is already on the top line of the screen, will cause scrolling in the opposite direction, i.e., 'scroll up'. The cursor can be brought to the top left corner of the screen by pressing the CTRL and T simultaneously. LEX-11 allows the text to be scrolled down through the whole length of the document but scroll up, or backward scroll, can only proceed two screens. To go further back than this one must press the ESC V keys sequentially which causes the file to quickly return to the beginning. One can then scroll down to the point required. Forward movement through the text can be achieved more quickly by using the 'find'or 'search' function which automatically searches the text for a given word or phrase and commences the display at that line.

KEYBOARD

The keyboard resembles a typewriter in layout except that it has more special keys and often has an extra 'numeric' or 'auxiliary' keypad to the right of the main keyboard. The keys may be broadly classified as either text keys, e.g., 'A B C' etc., or function keys, e.g. carriage return or tab.

Although the keyboard appears to be plugged into the 'screen', it is actually connected directly into the computer. The fact that letters typed on the keyboard appear on the screen is because the computer program (i.e. LEX-11) transmits them back to the screen - a process known as 'echoing!'

There are many more functions in LEX-11 than keys available and, therefore, this often requires the depression of the 'function key' prior to a second and sometimes a third key to signal a function to LEX-11. The auxiliary keypad can be set into a word processing mode which changes the ordinary meaning of the keys. This is done so that as many functions as possible may be requested from the computer by a single keystroke.

Most keys, when held down for more than about a second, will automatically repeat the character or function at a fairly fast rate. Some terminals require the simultaneous depression of a 'repeat' key to achieve this.

PRINTER

Most printers can represent text in a more varied way than a video screen, e.g., underlining and variation in horizontal and vertical pitch. The methods of representing these sorts of effects on the video are described below.

There are two broad kinds of printers associated with word processing. A fast printer for drafts or internal documents and a slower high quality or 'letter quality' printer for external documents. Some printers, by operating in two different modes, combine both features in the one machine.

There are a number of aspects about the actual printing of a document which require special handling because of the relatively limited means of displaying text on a video screen. Since LEX-11 is designed to run with a variety of terminals and printers, it needs to use a technique for video screen representation which recognizes this aspect of its design. Most letter quality and some draft printers can have their horizontal and vertical pitch varied. Characters can be also modified either by printing them 'bold,' probably by over-striking or slightly off-setting them, or by underlining them. Some printers allow the print font itself to be changed with a choice of about 3 or 4. Almost all printers will allow half-line feeds to enable sub-scripts and super-scripts to be typed. In a similar way, double or variable spacing of the text can be achieved using ESCAPE sequences to control the printer.

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GENERAL OPERATION

Here are some general instructions and hints about how you operate LEX-11. Because they are necessary for good operation you should make sure you understand them. You can refer back to these instructions when you first start working with LEX-11 to help you learn quickly.

STARTING UP LEX-11

LEX-11 can be used on many different types of computers and so the way in which you get LEX-11 going varies. You usually type 'RUN LEX11', Or sometimes just 'LEX11', or in some cases just LEX. Your supervisor or computer manager will show you how to get started if you have trouble.

Once started successfully, LEX-11 tells you that it is ready by displaying on the screen the so called 'main menu.'

MENUS

LEX-11 can perform many different functions for you. Among other things, for example, it can create a new document or edit, view or print one that has already been typed in. To help you tell it what you want it to do, LEX-11 displays a table of options on the screen. This table of options is called a 'menu.' You select the function by typing in the code of the option you require.

LEX-11 has many more functions than can be shown on one menu, so some of the options select other menus. These, in turn, display whole new sets of options.

USING THE KEYBOARD

In general you tend to be using the keyboard for two different reasons. Mostly you will be typing in text and so you will use the keyboard as you would an ordinary typewriter. The power of the word processor lies largely in its editing capabilities so periodically you may use the special 'function keys' on the keyboard and in some cases the auxiliary keypad. These are the keys that allow you to move text around, open up or remove spaces, etc. It is now appropriate to look at the keyboard you will be using.

MOVING THE CURSOR

The cursor appears at the point on the screen where typing will be displayed. It is like the ball on a typewriter which moves across as you type. The cursor is much more flexible than a typewriter ball and can move left or right, up or down very quickly and easily.

If you move the cursor to a spot on the screen you may make corrections by simply overtyping what is already there. You may position it somewhere else and instruct LEX-11 to push the text already there out of the way as you make an insertion. Moving the cursor is a very common and useful operation and so you should understand it properly.

One of the first things to learn about cursor movement is the difference between the use of the 'space-bar' on a typewriter and with LEX-11. The space-bar on a typewriter is used not only to leave spaces between words but also to move the typing point along the line past text already there. With LEX-11, however, the space bar actually types spaces so that moving the cursor

over text that is already there by pressing the space-bar replaces the text with blank spaces. The Right Arrow key can be used instead to move across existing text without space filling it. You will sometimes need the space bar to type blank space when you wish to deliberately erase existing text.

The arrow keys are the basic cursor movement keys. Pressing an arrow key once moves the cursor one character position in the direction of the arrow. Most keyboards have 'auto-repeat,' which will automatically repeat a key without you having to repeatedly press it, and it is common to use this feature with the arrow keys. Usually auto-repeat occurs when the key is held down but on some keyboards there is a special REPEAT key. A special note should be made here about the use of auto-repeat. The repeat rate is usually quite fast and can put an unnecessary load on LEX-11 when used extensively, particularly when moving up and down. If you have long distances to move the cursor you should use the keys described below.

- The RETURN key moves the cursor to the beginning of the next line, just as a typewriter.

- The TAB key moves the cursor to the next tab stop to the right. The tab stops are determined by the ruler currently operating. The section on rulers explains this in detail.

- CTRL and G keys pressed together move the cursor to the space following the last character typed on the line. This is very useful for getting to the end of the text on a line so that you can continue typing.

- CTRL and T keys pressed together move the cursor to the top left-hand corner of the screen. This is called the 'home' position.

A normal screen, as you will find out, can display 24 lines of text. You will certainly be needing to work on letters and documents larger than 24 lines and so LEX-11 uses a method called 'scrolling' to enable you to do so.

Instead of keeping a long document broken up into many pages, LEX-11 stores it as though it was on one long sheet of paper and then 'scrolls' it up just like the parchment scrolls of old. When you want to work with a document LEX-11 'unscrolls' it for you, starting at the beginning and working towards the end, allowing you to look at 24 lines of it on the screen as it goes. If you tell LEX-11 to move the cursor down past the bottom of the screen in some way, for example using the Down-Arrow key, the text 'scrolls up' one line - the top line disappears off the top of the screen, and the next one appears at the bottom.

The normal way of working on a document using LEX-11 is in sequence from beginning to end. When you are entering a new document extra lines on which to type are always available and are scrolled up from below the bottom of the screen. If you are making changes to an existing document you start at the beginning and scroll through making changes on the way. CTRL L is useful for scrolling through a document. It moves the cursor down one screenful allowing you to move quickly though the document a screen at a time.

You may, from time to time, want to go back and fix up something that has scrolled off the top of the screen. If you bring the cursor to the top of the

INTRODUCTION

The LEX-11 word processor is very similar to a typewriter. It is used mostly for typing letters and documents but it also has many facilities not found in ordinary typewriters to help in this task.

Probably the single most useful thing about LEX-11 is that it remembers everything you type in its own memory. This means that you can type in a document once and change parts of it without having to re-type the whole thing again. Using LEX-11 is like typing a letter or document in draft and then filing it away, so that later you can make changes to it or produce printed copies of it.

Instead of typing directly onto paper, you type on a keyboard attached to a screen and your typing appears on the screen. This keyboard and screen is called a video terminal. Because you type on a screen and not paper, corrections and changes can be made very easily. There are special keys on the keyboard to enable you to add or delete spaces or text or move portions of text around easily. LEX-11 remembers everything you type so that you can type in a document and change it many times before actually printing it out onto paper.

The typing point is indicated on the screen by a small flashing block or line, known as the 'cursor,' and this can be moved to any part of the screen by using the special 'cursor-control' keys. These include arrow keys for moving up, down, left or right and others for skipping over words or to the last character typed on a line. Being able to position the cursor anywhere in the text coupled with the ability to open up spaces or move text around makes changing text very easy.

LEX-11 allows the setting of margins and tab stops just like a typewriter by using 'rulers.' A ruler is a special line in a document that LEX-11 recognizes. This line is made up of a full width line of full stops with certain letters at intervals across the line to mark tab stops, margins, etc. There can be many different rulers used during the typing of a letter or document to enable changing indentations and setting up columns. Rulers are left embedded in a document and are, therefore, remembered by LEX-11 so that they do not have to be set up again if the document is to be changed later.

Rulers in LEX-11 do much more than just set tab stops and margins. They can be used to do things like automatically center headings, or give straight right-hand margins (like this manual), or line up and even add columns of numbers. One very useful effect of typing text under the control of a ruler is that, when the end of a line is reached, the word being typed will 'word-wrap' - that is, LEX-11 will know that there is not enough room for the word on the line and will automatically move the whole word to the beginning of a new line. This means that you need not watch the text as you type in order to decide when a new line should start - you can just type the words as they come, and let LEX-11 place them in properly organized lines.

When you have finished working on your document it is stored away on the computer's disk ('filed') ready for you to make subsequent changes or to print it out.

In this Beginner's Guide we will discuss how to enter documents and letters into LEX-11, how to edit ones that have already been typed in and how to print them out onto paper. There are many other things that LEX-11 can do, from keeping lists of names and addresses for automatically addressing letters and mass mailings to performing calculations on tables of numbers. These are described in the Intermediate Guide.

screen, either by using CTRL T or the UP-ARROW key, and continue to hit the UP-ARROW key, the screen will 'scroll down' - lines that had disappeared off the top of the screen will roll back down onto the screen, pushing lines off the bottom. You can, however, scroll back only up to 72 lines. This means that, as you scroll though a document, lines that are more than 72 lines back from the current top line on the screen cannot be accessed with the UP-ARROW key. To do so you need to go back to the beginning of the document and scan through again. LEX-11 has an ESC V function to take you back to the beginning of a document (the ESC and V keys should be pressed sequentially). It also has a find function explained in detail later on, to help you quickly find a spot in the document without having to scroll through it screen by screen.

AN OVERVIEW OF DOCUMENT/LETTER CREATION

DOCUMENT NAMES

As you use LEX-11 you will gradually build up a collection of many documents on file. So that LEX-11 can tell the difference between them and that you can recall them for later work, you must give each document a unique name. When you first create a document, LEX-11 asks for a name and checks to see that it does not already exist. From then on you must mention that name whenever you want to edit or print the document.

LEX-11 requires document names to be in a special form and there are rules that have to be followed in order to make up a proper name. An example of a proper document name is shown below.

SMITH1.LTR

A document name, as you can see, is made up of two parts separated by a full stop. The first part is called the 'prefix' and can be between one and six characters long. The second part after the '.' is called the 'document type ' and must always be three characters long.

A document name is split into two parts like this for a reason. It has to do with helping to organize and keep track of the many documents kept on file. The document type is used to tell you what kind of document it is, for example, a letter, memo, invoice, report, or manual and so on. The three letter document type is a code that you choose for these different types of documents. There are certain considerations about selecting the different types you might want. These depend on rulers, key-stores (both explained later) and your work load, so you will need to understand about those before deciding on your full list.

Some examples might be:

.LTR - letters
.MEM - memos
.INV - invoices
.REP - reports
.TMP - temporary document

The first part of the name or 'prefix' tells you which letter, invoice or report the document actually is. So the name we used as an example, SMITH1.LTR, could refer to the first letter that was typed to Mr. Smith. An important thing when choosing names is to make them as meaningful as possible.

Blank spaces are not allowed in a document name. Both parts must be made up of alphabetic letters or numbers. Lower case letters are treated as though they were upper case. That means the names

SMITH.LTR and smith.ltr

refer to the same document.

Examples:

SMITH1.LTR
bills.mem
X.TMP

INTRODUCTION TO RULERS

Before you start working on a document it is important, just like on a typewriter, to make sure that the margins and tab stops are set up properly. Such things are set up on LEX-11 by using 'rulers.' Using rulers is just as easy as setting tabs and margins on a typewriter.

Rulers are used mainly to set up tab stops and margins, but they can do other useful things, too, like lining up columns of numbers and centering titles.

Just what is a ruler? If you type a line of dots from one side of the screen to the other, like this

```
.......................................................................
```

you have the makings of a ruler. To complete the ruler you need to tell LEX-11 where the tab stops and margins are. This is done by placing certain letters along the line of dots to indicate these positions. An example of a proper ruler might be:

```
T......T.......T.......T.......T.......T.......T.......T.......T.......T.......
```

Here the capital T's indicate tab stops (T for 'tab'). Hitting the TAB key under this ruler causes the cursor to move to the next tab stop to the right just like on an ordinary typewriter. You can have as many tab stops (or T's) as you like and they can be at any desired position. Margins are indicated by using different letters in the ruler.

For example,

```
.............F.......................................................M............
```

is a ruler in which the left margin of a column is indicated by the capital F and the right margin by the capital M. You can use letters other than F and M to set up margins, for example L or R or C or J. The particular letters you choose tell LEX-11 what sort of margins they are.

As you work through a document, LEX-11 looks for lines that look like the one above and tries to make sense of them as rulers. When it finds a ruler, either because you just entered one or because it came across one as you scanned through some already-typed text, it set tab stops and margins according to what it finds in that ruler. This means that as you type in a document you will insert rulers as the layout changes, like indentations, margins and tab

settings for tables. A ruler has control over the text following it up until the next ruler. You will wind up with documents with rulers scattered through them at appropriate places. These 'embedded' rulers are not printed by the printer when it prints a document and yet they remain in the stored document so that if you want to make some changes later they are already there - you do not have to set them up again.

It probably sounds a bit tedious having to type in all the dots when you want to change a ruler. Fortunately there is an easier way. LEX-11 keeps a table of five useful, already set up rulers from which you can choose. ESC M is used to obtain one of the pre-set or 'default' rulers and have it inserted in the text. There are five default rulers in the table. To get the one you want, you press ESC M followed by its number - between 1 and 5. Four other rulers can be temporarily set up within the document and recalled at will by using ESC followed by M and its number - between 6 and 9. ESC M O displays the ruler currently in use.

You might at first wonder whether just 9 rulers are enough to cover all your typing needs. First, LEX-11 keeps more than 1 table of rulers. You can, however, only use one table of rulers at a time. Which table of default rulers you get depends on the type of the document you are working on. There is one table of default rulers for each document types and you can learn how to use them in the Intermediate Guide.

Second, it is quite normal to obtain a ruler from the default table that almost does what you want and then to edit it on the screen to do exactly what you want. All the dots you need will be there and it is very easy to just place the tab stops and margins where you want them.

Having changed a default ruler in your document like this, you can store it as changed in the ruler table for use later in the document so that you do not have to keep changing the original default ruler every time. You do this by using ESC W followed the ruler number. You must position the cursor somewhere on the ruler you want to store away and press ESC W followed by the number, 1 to 5, of the original default ruler you wish the new one to replace. This changes the default ruler table only until you have finished working in the current document. When you start on another document of the same type the table reverts back to its original state.

We have yet to talk about how different rulers control your typing but it is best that we first get into actual document creation and typing. Rulers and their effects are explained in detail later.

THE EXIT FUNCTION

When you have finished doing some work on a document and wish to return, say, to the main menu to do something else, you press ESC E. This files the document on the computer's disk and re-displays the main menu. This is just one use of ESC E, it has many others that are useful to know about before getting on with some work.

ESC E, in fact, is the general way of 'getting out of things.' At almost any point in your working with LEX-11 you can press ESC E and it will get you out of what you are doing, clean things up like filing documents if it has to, and re-display the menu that you were using. For example, in editing an already existing document, LEX-11 displays the title of the document in order for you to verify that it really is the one you want to work with. You can press ESC E at this point if it is not the correct one.

It is important to understand that ESC E does not cancel something that you have already done. For example, if you are in the middle of editing an already existing document, and you decide that you do not want the changes that you have so far entered, using ESC E will not take out those changes but will file the document away with them in. In this instance you should use ESC Z or recover from a 'backup' copy as explained later.

ESC E is also the way of getting out of a secondary menu instead of selecting one of the options displayed. Using ESC E under the main menu takes you out of LEX-11 altogether. It is the proper way of finishing up with LEX-11. It is a good idea never to leave the word processor unattended for any length of time without having exited out of LEX-11.

CREATING A DOCUMENT

Choose the CREATE A DOCUMENT option by typing in the code shown on the menu. LEX-11 will then ask for the document name. Type it in. You can use the DELETE key to make corrections if you make a mistake. Hit the RETURN key after you have typed in the name.

LEX-11 now checks to make sure there is not another document of the same name on file. If there is, it sounds a beep in the terminal and displays a message telling you that the document already exists. You should then check that you have used the right name and if you have, you should make up another, because the system will not accept two documents with the same name. Remember ESC E will get you out to the menu again at this stage.

The document directory is a list, kept automatically by LEX-11, of the documents you have created with LEX-11. The list contains document names, a 40 character document description or title, and dates of creation and editing. The document directory is handy to have if you are keeping a lot of documents on file. If you prefer, the document directory inside LEX-11 can be disabled.

If you have the document directory enabled LEX-11 will now ask for a document title or description. This can be any text and up to 40 characters long. Type it in and hit RETURN.

The screen will clear and the cursor will appear in the top left hand corner. This represents a blank piece of paper with the typing point at the top. LEX-11 is now ready for you to begin typing.

Select a ruler with the ESC M function and make changes to it if needed. Remember that the TAB key will get you to margin and tab stop positions. Start typing your document. You can watch your typing on the screen and, by using the editing functions detailed opposite, correct your typing errors or omissions as you go. NOTE that words wrap around at the righthand margin and, therefore, you do not need to use the return key.

There are other functions described elsewhere which make typing and editing easier, such as Ruler Control, INSERT-TEXT-MODE and CUT-&-PASTE.

Normally you will first type a draft of the document and print it out on a high-speed printer to have it proofed. When you have corrections to make, you will use the EDIT DOCUMENT menu option and scan through the document making corrections. You can scan through with the cursor control keys or by using the ESC F function to position the cursor at a known spot in the text.

The normal way of making corrections is to correct a paragraph at a time. You use the editing functions described below, e.g. CTRL A to insert a line or CTRL P to delete a character, to make changes needed in a particular paragraph. These editing functions almost always upset the justification and general layout of the text in the paragraph. It is the job of ESC J to clean up the layout. ESC J works a paragraph at a time, so it is best to make all the changes to a paragraph and then re-justify it once with ESC J.

TEXT EDITING FUNCTIONS

Editing Function	Its Purpose
CTRL A	Opens up a blank line in front of the line that the cursor is on. It leaves the cursor on the blank line for you to insert text.
CTRL X	Squeezes out from the text the line that the cursor is on.
CTRL N	When you want to insert some characters into a word or line, pressing this key causes a space to be opened up at the current cursor position. The rest of the line to the right of the cursor is 'elbowed' out of the way.
CTRL P	Squeeze out from the text the character that the cursor is on. The line to the right is pulled across.
DELETE	The key marked DELETE or RUBOUT is used during normal typing to make corrections as you go. If you type a wrong letter and realize it, hit the DELETE or RUBOUT key which moves the cursor back over the wrong letter and rubs it out so that you can then type the correct letter. Continued hitting of this key moves the cursor backward a character at a time, blanking text out as it goes.
ESC J	Re-types the entire paragraph[1] in which the cursor is positioned. This function is used to 'clean up' a paragraph after you have made changes to it. Using the above editing keys will probably cause gaps and funny line endings - rejustify cleans them all up. It is also used to retype a paragraph under a new ruler so that new margins apply.
ESC I	The normal mode of typing is called 'over-type', that is, any text already on the screen is just typed over by LEX-11. Using this function causes the typing mode to be changed to 'insert' - any text that would be overtyped is pushed out of the way as you go. ESC J, as well as cleaning up a paragraph, turns the typing mode back to normal. Pressing ESC -I also turns off insert mode.
ESC F	Used to find a known spot in the document and position the cursor there. Press the ESC key followed by F and then type the word, phrase or character string you want to find and then press RETURN. LEX-11 then scans through the document from where you currently are looking for the next occurrence of that character sequence and positions the cursor there. If there are several occurrences of that

1) "paragraph" = tekstgedeelte begrensd door lege regels en/of rulers.

character sequence between where you are and where you want to get to then you can press ESC F again followed immediately by RETURN and it will look for the same thing again. If LEX-11 cannot find the character sequence it tells you so and positions the cursor back at the beginning of the document.

(see the Reference List at the back of this Manual for a more comprehensive list of Functions)

When you have finished working on a document, you use ESC E to file the document away on disk and to return to the main menu. If you want to start back at the beginning of the document again without returning to the Menu, you can use ESC V.

CHANGING AN EXISTING DOCUMENT OR LETTER

To make any changes to a document once it has been stored away on disk you should choose the EDIT DOCUMENT option on the menu. It behaves in the same way as CREATE DOCUMENT, except that it accesses a document already created and allows you to make any deletions, changes or additions required.

Having chosen this option, the name of the last document you have created or edited during this current work session will be displayed. If that is the one you want then simply hit RETURN. If it is not you, can either delete the name shown with CTRL V and type in the one you want or use the editing keys mentioned below to make it what you want.

EDITING KEYS allowed in typing in Document Names

RIGHT-ARROW
LEFT-ARROW
CTRL N (insert character)
CTRL P (delete character)
CTRL V (delete to end of line)
ESCn (keystore recall)
CTRL F (forward word)
CTRL B (back word)
CTRL G (end of line)

After typing in the name, hit RETURN and, again, depending on whether you have the 'Document Directories' enabled, LEX-11 will either go straight into the editing or display the document title. If it displays the document title you should verify that it is the document you want and press RETURN again. If it is not the one you want press ESC E and check your document name.

The screen will blank out and the first line of the document will appear at the bottom of the screen. You can use the cursor control keys to move the cursor to the places that you want to change or add text. At this stage LEX-11 behaves exactly as it does under the CREATE DOCUMENT option, so you can use all the normal text editing functions.

If you type in a document name which does not exist, the terminal bleeps and an error message appears at the top of the screen. Either overtype the incorrect name with the correct one or use ESC E to return to the main menu.

RULERS

When you start to create a document/letter, you need to set margins and tab settings just as you would on a typewriter. The difference is that you create a ruler on the screen, or display an existing one and change it by using the

cursor, to meet your requirements just as you would change your typewriter settings.

There are 9 RULERS available, numbered 1-9, which can be called up by typing ESC M followed by a number between 1 and 9.

A ruler is a line of 80 characters made up of dots or any of the letters C,J,F,L,R,T or M, but the last character in column 80 must always be a dot.

a) J and F are characters used to mark the lefthand margin, and M marks the righthand margin and makes the words 'wrap around' at that point onto the new line so that the operator need not use any carriage returns or watch the text, except for ending mid-line and starting a new paragraph.

Using J for the lefthand margin dictates that the text will justify when it automatically wraps around at the righthand margin (i.e., justify means inserts spaces to give a straight righthand edge - as illustrated in this manual), and using F leaves the righthand margin ragged as in normal letter style.

For example:

```
.......................J...............................M.........................
                        This is an example of a
                        word-wrapped column in which the
                        righthand side is made straight
                        by using a 'J' at the left hand
                        margin. Notice how LEX-11 pads
                        things out with spaces to make
                        it all work.

.......................F...............................M.........................
                        This is an example of a
                        word-wrapped column in which the
                        right hand side is 'ragged'.
                        LEX-11 simply moves a whole word
                        down onto the next line if it
                        will not fit. It is most common
                        to use this type of column for
                        correspondence.
```

b) Using a C centers a word or phrase between the C and the next margin setting; see the two examples which follow:

```
......C.........................................M.........................
                    HEADING

.......C...............L.....C.................L...........................
          TITLE                  TITLE
```

Position the cursor under the C (if it is inset, use the TAB key), enter insert mode (ESC I), then type your word or phrase. The text will be automatically centered. When you have finished the centering, press ESC -I to exit from insert mode.

OR (an alternative method)

Position the cursor under the C (if it is inset, use the TAB key), type your word or phrase then press the tab key which centers the text between the two stops.

To continue with normal text, set up a non-centering ruler below the heading line(s).

c) Any valid letter in a ruler becomes a tab setting. If no ruler settings are required other than a series of tab settings, then use T to indicate each tab stop. Tabs are not embedded in the text - they are merely an aid to positioning the cursor. Ruler 7 consists solely of tabs every 8 characters.

d) L, R and T are tab stops. L gives a left-justified column, R a right-justified column and T is used in conjunction with 'Insert Text' mode (T will be dealt with in more detail later).

To use right aligned tabs, use an R in the ruler at the start of the right aligned column, and any other valid ruler character, e.g. another R if your next column is also right aligned, at the end of the desired right aligned column. Position the cursor under the R by pressing the tab key, type the word(s), then press the TAB key again and the word(s) will move across to the next tab stop. The following are two examples:

```
.......L.............L.............L...............L..............L.......
       this          is            text            in             columns
       which         are           left-justified  using          tabs
       1             2             3               4              5
       10            20            30              40             400
       100           200           300             400            500

R..........R............R.......................R........R...............L.
        this           is                   text       in          columns
       which          are         right-justified    using             tabs
           1            2                       3        4                5
          10           20                      30       40               50
         100          200                     300      400              500
```

e) If you want to type two columns of continuous text, you need the text to word-wrap. Therefore, you set a ruler similar to the one in the example following and type one column at a time.

```
.......J.............................M...........J.............................M.
       This is justified text which            This is the second column,
       is being typed in two columns            which is typed when the first
       rather like newsprint. This              is completed.
       whole column is typed first.
```

f) Hashes (###) used in a ruler put LEX-11 into calculator mode when the cursor is positioned (by using the tab key) under the hashes. Only figures can be typed at that point. When you tab to the column, the cursor is automatically moved to the extreme right of the column and figures entered are moved out to the left of the cursor point. See the example below:

Once the calculator has been entered, any of the functions described in the calculator section may be performed. (If you want to make use of the calculator, see the Calculator section in the Intermediate Guide.)

```
.......J.......................M....#####.##......#####.##.....########.##.....
                                   Amount          Tax            Total

    Annual Report for the
    year ended 1980                2301.50        345.22         2646.72
```

g) The last ruler appearing above the text you are working on is the one that applies. Therefore, during an editing operation, if you move the cursor up through a ruler displayed in the text and there is a different ruler in use for the text above that point, then that previous ruler takes effect until you move the cursor back through the subsequent ruler.

A valid ruler appearing in text on the screen will not be printed out, nor the line it occupies. If it does print out, check that the ruler characters and dots extend the full width of the screen.

Text may be rejustified, that is changed to a different margin setting. For instance, if you have typed a document with a ruler setting made up of F....M but actually want J....M, you can change the F to a J, position the cursor in the body of each paragraph and press ESC J. This re-arranges the text to the new ruler setting. You can use the same procedure to make paragraphs wider, i.e., move the M to the right or the J or M to the left and press ESC J.

If you want to make text narrower, position the cursor on the old ruler line leaving the F and M (or J and M) in place, type another F or M where you want the new margins to be, then TAB into the new F or J and type ESC J.

h) Anything typed outside the margins appears on the output document as it was typed. The cursor may always be moved outside the margins by means of the left and right arrow keys, which are not subject to word-wrap.

RULER CONTROL

When you are typing a complex document, you may want to use several different rulers. Therefore, there is a means of numbering the temporary rulers you have created, so that you may change to whichever one you wish at any point in the document without having to recreate it.

Pressing the ESC M keys followed by the number 1 displays Ruler 1. You can then change this to suit the requirements of your document, write it away as a new ruler 1 by pressing ESC W followed by 1 (it will only be retained in this format during your present work session - exiting from the current document will make Ruler 1 revert to its original form). You can do this with all 9 rulers.

As an example, press ESC M 2 to bring up Ruler 2, change it by positioning the cursor on the ruler line and typing the characters where you want them with dots everywhere else; write it away as new ruler 2 by pressing ESC W 2. Since

that ruler is displayed on the screen, the text you begin typing below it takes account of that setting.

Now, say you want to type the next part of the document with narrower margins, press ESC M 3, change that ruler if necessary to the margins you want, press ESC W 3 to write it away as new ruler 3, then begin typing under that ruler. When you want to revert to the wider margin again, you type ESC M 2, which displays Ruler 2 and brings it into use.

You can also make a ruler in the default ruler table take control without it appearing in your text by using ESC U followed by the number of the ruler. However, you will probably find you prefer to display rulers, because although they appear in the text on the terminal, they are not printed out and you can move back through the document to make changes using the rulers appearing in the text; on the other hand, if you use rulers without displaying them within the text, by using ESC U n, you have to re-enter them when editing. ESC U does have special uses but they are not needed for normal editing. ESC U n is very useful for editing source code of computer programs, where rulers would not be interpreted as valid statements. These uses are described further in the Technical Guide.

Particular rulers required every time a specific document is typed should be pre-set in the Document Format Details and recalled in the same way as above.

FUNCTIONS AVAILABLE FOR RULER CONTROL

Function	Action
ESC M n	Display (Map) ruler number n (n = 1 to 9).
ESC M 0	Display the current ruler.
ESC W n	Define the line the cursor is on as Ruler number n and make it the current ruler. An invalid ruler will cause this command to be ignored and a bleep will sound with the cursor positioned at the first invalid character. (n = 1 to 9).
ESC U n	Use ruler n as the current ruler. (n = 1 to 9).

The initial current ruler is always ruler 1 assuming no embedded ruler in a document.

INSERT TEXT MODE

When creating or editing a document or letter, you may insert as many extra words or lines as you wish at any point in a document, by positioning the cursor at the point where you want to insert extra text and pressing ESC I. As you type, the following text is pushed across the line and on to the line below as it reaches the margin.

When the insert is finished and with the cursor still positioned within the paragraph, press ESC J to rejustify the text, i.e., tidy up any partial lines, and to exit from insert mode. If you want to exit insert mode without rejustifying text, press ESC -I.

If you are typing a tabulated document, you may insert text within a column without disrupting the other columns because insert mode takes accounts of L's

and R's in ruler settings and causes LEX-11 to bleep when the text reaches the next tab stop. If you want insert mode to ignore tab stops, then use T's instead of L's or R's. These allow you to tab to that point but they are not recognized as stops by Insert Mode.

Insert mode can also be used for automatic centering as it recognizes a C in the ruler setting. (See Section (b) above on Rulers).

CUT AND PASTE

Cut and paste allows you to move, copy or blank out a paragraph or block of text and place it elsewhere, by marking the paragraph and identifying what should happen to it.

The block of original text, which must be rectangular, is defined by using the cursor and in each case typing appropriate keys, as described in the tables below. Whether the block is left there, squeezed out or made blank, it is also stored and can be recalled any number of times into various parts of the Document until the next Cut and Paste operation is carried out.

Cut and Paste

To insert the stored text it is merely necessary to position the cursor at the new top left corner and key the appropriate recall codes.

Do not attempt to cut and paste more than one screen of text, because both 'marked' points must show on the screen.

MOVING A COLUMN

CUT:

Position cursor over first character at the top lefthand corner of the column to be moved.

Type ESC (

Move cursor to bottom righthand corner.

Type either:
ESC)S (to cut it and 'squeeze' out space)
ESC)L (to cut it and leave it there but take a copy) or
ESC)B (to cut it and blank it out)

PASTE:

Place cursor at the top lefthand corner of where you want to reposition the column.

Type either:
ESC *I (to insert it vertically between existing text)
ESC *O (to overlay it over existing text or space) or
ESC *E (to elbow existing text to the right to insert it)

MOVING A PARAGRAPH

It is common to want to move a full screen-width of text, typically paragraphs. Moving the cursor to the bottom righthand corner of the screen is cumbersome. There is a special way of cutting designed for this purpose, which involves marking the top and bottom of the text to be moved with the cursor on the extreme left hand side of the screen. Marking the top and bottom on the very lefthand edge of the screen like this is taken by LEX-11 to incorporate the full width of the screen. The same operations which are described above still apply.

CUT AND PASTE FUNCTIONS

CUT FUNCTIONS

a. The 'Squeeze' Option

Removes the space which was occupied by the cut text. If the area cut is less than the full width, the text to the right is pulled over the cut area.

b. The 'Leave' Option

Leaves the text in position and merely takes a copy to be placed elsewhere.

c. The 'Blank' Option

Leaves the blank space in place of the cut text.

PASTE FUNCTIONS

a. The 'Overlay' Option

'Pastes' the cut text over any existing text at cursor point. Position the cursor at the top left corner of the rectangle which is to be overwritten and type ESC *O.

b. The 'Insert' Option

At cursor point, moves existing text down and inserts cut text in resultant space. Position the cursor at the point where you want to insert cut text, and type ESC *I.

c. The 'Elbow' Option

At cursor point, moves existing text to the right and inserts column of cut text in resultant space. Position the cursor at the point where you want to insert cut text and type ESC *E.

MERGING TEXT FROM ONE DOCUMENT TO ANOTHER USING CUT AND PASTE

Cut and Paste can be used to copy a portion of one document into another document, as follows.

Using the view option, V in main menu, select the document from which the portion is to be transferred. Move the cursor to the top left of the portion, type ESC (to mark the beginning; then move to the bottom of the portion, type ESC)L (to mark the end and merely hold a copy). Type ESC E to exit from viewing this document.

Move into the document into which you wish to transfer the held text (by using option E if the new document already exists, or option C if you are creating an entirely new one), position the cursor at the point at which you wish to merge in the text, type ESC *I or ESC *O as appropriate and the held text will be merged into the document. ESC*E may also be used to insert a column of text between two existing columns.

WARNING: (Cut and paste can be used to merge a MAXIMUM of one screenful at a time).

MERGING TEXT FROM ONE DOCUMENT TO ANOTHER USING THE MERGE FACILITY

At any point in any existing document or when creating a new document, text can be merged from any number of other existing documents into the current one, by merely opening files.

At the point at which you want to merge the text, you type in ESC MO (Merge Open) and LEX-11 responds with the prompt 'Document Name:'. This should be answered with the name of the document you wish to open, followed by return (if the document does not exist, LEX will bleep).

You can then:
merge a line at a time from the beginning - by typing ESC MI (Merge Insert);

or you can advance to a specified point - by typing ESC MA (Merge Advance), LEX answers with the prompt 'String:' and you type in a unique word or phrase ('string') from the point to which you want to advance, followed by return. Nothing is displayed but you may then type ESC MI to insert line-by-line from that point,

or merge from there until a specified point - by typing ESC MU (Merge Until), LEX answers with the prompt 'String:' and you type in the string you wish to merge to, followed by return. Text from the first specified string until the second specified string will now be inserted on the screen.

To merge from the current point (which may be the beginning) to the end of the text, you type ESC ME (merge to end).

You may open and merge from as many different documents as you wish, by repeatedly typing in ESC MO and specifying the new file name, then using the instructions ESC MI, ESC MA, ESC MU or ESC ME as explained above.

PRINTING DOCUMENTS AND LETTERS

Once you have a document on file, of course, you want to be able to print it out, either to get a draft copy for proof reading or to produce a final copy. You should choose the PRINT DOCUMENT option on the menu for this task.

NUMBER OF PRINTERS

A normal LEX-11 installation will have more than one printer. Usually there are two, a fast one for draft and volume printing, and a slow letter quality one for producing final copies. It is necessary, therefore, to choose at print time which printer the document should go to. Some installations may have only one printer and so there is no choice.

There may also be several terminals on the system doing word processing but only one set of printers. A third possibility, therefore, at print time is whether to print directly to the printer or, if it is busy, to print to a so called 'spool file' on the computer's disk which can then be printed when the printer is ready. This 'file spooling' is very dependent on the type of computer that your version of LEX-11 is running on and so further details on this will come from the installation engineer. There are some general considerations in the 'Installation Notes' section of the Technical Guide.

TYPES OF PRINTERS

LEX-11 word-processing installations can also work with many different types of printers.

Different printers generally work with two different kinds of paper. One, commonly used on fast draft printers, is so called 'continuous paper' which is one long sheet of paper fanfolded and with sprocket holes along the side. Once loaded with a box of continuous paper, these high speed printers can print thousands of sheets before having to be reloaded. The other type is single sheet - the sort you normally use on typewriters. This type is commonly used with the slower letter quality printers and you have to feed each sheet in by hand. There are some smart letter quality printers with automatic single sheet feeders on them. You have to tell LEX-11 at print time what sort of printer you are printing on - that is whether it is single or continuous sheet feed.

PRINT TIME QUESTIONS

When you choose the PRINT DOCUMENT option, LEX-11 asks you several questions which have to do with the above options as well as some other selections you can make.

The first question is:

Pause at TOP of Form?

This has to do with the single or continuous sheet option. If you are printing on a single sheet printer, answer Y (for YES) to this question. Otherwise answer N or RETURN (for NO). Answering Y to this question causes LEX-11 to stop printing at the beginning of each page to allow you to insert a fresh sheet in the printer. It then asks you to make sure the paper is properly lined up for each page and to hit any key to tell it that you have the paper ready.

If you used titling (.T) and page numbering (PPPP) when creating your document, the system will also ask you 'Start Page No?', 'Skip to Page No?' and 'End Page No?'. LEX-11 does not number pages until print time since you may have inserted extra text which would have changed the numbers.

'Start Page No.' is for you to tell LEX-11 the number from which you wish page numbering to begin, therefore you answer with the start number you require and a carriage return. For instance, if you have a report consisting of three chapters which you created as three separate documents, you would want the second chapter to start numbering from the point at which the first finished, despite the fact that it is a separate document (and the same with the third chapter). 'Skip to Page No.' is for you to enter the page number from which you want printing to begin (either the first page or further through should you wish to resume printing after an interruption) and 'End Page No.' is for you to stop printing at a specified page if you desire. If you want to print the whole document and do not know the total number of pages, enter a randomly high number.

So, in the case of two associated documents, in printing out document 1 which may be 10 pages long, you would put Start Page 1, Skip to Page 1; and in the case of document 2, you would put Start Page 11, Skip to Page 11; and if printing were interrupted at page 13, you would start again in Option P and answer Start Page 11, Skip to Page 13.

The last question is:

Which Printer 1) Slow 2) Fast or 3) spool to a file?

In fact, the last question may look a little different depending on the type and number of printers your installation has. In any event, choose the number beside the printer you want and things will start printing. If you choose the spool file option, LEX-11 will then ask for the name of the file you wish it to spool to. This name must be in the same form as a document name, as described in the DOCUMENT CREATION section of this Beginner's Guide.

If you selected Pause at Top of Form, LEX-11 will now ask you to place a sheet in the printer, line it up and then hit any key to tell it that the printer is ready to print the next sheet.

At the end of each page on a single sheet feeder it will again ask you to load a fresh sheet and press any key to continue.

CONTROLLING DOCUMENT PRINTING - PAGING, TITLES AND MERGING

The LEX-11 document printing function has many facilities to help you control the layout and printing of documents. First, it can automatically 'paginate.' This means that while it prints it watches out for the coming end of page and skips to the top of the next page, leaving a proper margin at the bottom and top of each page. The actual size of these margins is determined by information in the 'Document Printing Details' as described below and is usually already set to a proper size. You can also instruct LEX-11 to start new pages at various points through a document, for example the beginning of new chapters or if you want to force a table to be all on one page.

LEX-11 can also put titles on the top of each page and footings on the bottom of each page. The titles and footings can have automatic page numbers and

dates put into them. Titles are implemented by using .T at the top of the document and can contain up to 8 lines (that is lines of heading plus a specified number of blank lines per page, i.e .T3,2 would give three lines of title and two blank lines per page) and footings are implemented by embedding a .F within the first page of the document text which reserves the next two lines for footing text.

You can also make a large single printed document out of several smaller documents with the 'print-merge' facility. This facility is extremely useful when you are working with large documents or manuals. It is most convenient to split the large document up into smaller files, for example one for each chapter, and maintain each separately. You can then use the merge facility to print them all at print time, to make one large final document. Titles and pagination all flow correctly across print-merged documents. 1)

CONTROL LINES.

The way you achieve control over these facilities is through 'control lines' inserted at appropriate places in the documents you are printing. These control lines, like margins, are not printed out but merely control things like pagination, titling and so on.

A control line has a special form. It MUST start with a full stop in column one immediately followed by a one or two character code that identifies what type of control line it is. For example,

```
.P
|
column 1
```

is the 'page throw' control line - a period in column one followed by a capital P. The control line must contain no document text. The control line code MUST be in upper case.

The following is a list of the control lines and what they do.

Control Line	Its Purpose
.P	HARD PAGE DEFINITION immediately 'throws' the printer to the top of the next page and starts printing the next part of the document. It is used to force pagination for chapter or section beginnings and tables to begin at the top of the page.
.PP	SOFT PAGE DEFINITION. Does the same as above, but is used for pagination made necessary by the paper size, and is used in conjunction with the edit-time PAGINATE function. (see below)
.Tn,n (e.g. .T4,2)	TITLE DEFINITION. Used to specify a title of up to 8 lines that will be placed at the top of each page by LEX-11 as it is printing. The advantage of this is that you only have to specify the title once and do not have to worry about where page breaks might occur. The specified lines immediately following .T are taken as the text of the title. Note that the .Tn,n has to be on a line by itself followed by the number of lines which have been reserved for the title and that it should be the very first line in a document.

1)

A title definition does not cause a page throw. It simply sets up the text for the title for following pages. If you want to start a new page with a new title, you should set up the title with a .Tn,n and follow it immediately by a .P.

LEX-11 looks for the character sequence PPPP and if it finds it places the ascending page number at that spot in the title.

As an example:

```
.T
LEX-11                    Beginner's Guide                    Page PPPP
                                                              July 1981
```

LEX-11 does not start printing titles until the first .T If you want titles all the way through, the very first item in your document should be the .Tn,n and its following lines.

.F — FOOTING DEFINITION. Almost identical to the .T except that it prints the text at the bottom of each page and is limited to two lines of text. The .F, again, must be on a line of its own and be followed immediately by exactly 2 lines of text. These lines can also contain the PPPP special character sequences.

.M document name — PRINT-MERGE FILE. The print-merge file control line indicates that the document specified by the document name on the .M lines should be printed at this point. You can use the merge file facility to merge-in standard sub-sections or to construct a complete document from several smaller ones. The document name must be the only other text on the .M line, and must be separated from the .M by one or more spaces

There can be as many .M's in the primary document as you desire but there cannot be any in the merged-in documents. If you are building a large document from several smaller ones, it is convenient to construct one 'master' document which just contains the .M for each of the component documents.

For example a Master File whose name is LEX11.DOC might contain the following:

```
.M M0.DOC
.M M1.DOC
  .
.M M7.DOC
.M M8.DOC
```

.S n — This is used to vary the line spacing between lines at print time. Valid values for n are .5, 1, 1.5, 2, 2.5, 3. It can be used to give double line spacing, by .S 2, or half line spacing, for subscripts and superscripts, by .S .5 Note that the edit time pagination and the print time pagination both take account of .S lines when counting lines for pagination purposes. 1)

.I — This is used as a general purpose information line, which could be used to pass information to a non-LEX print program. LEX will ignore this line for line counting and printing, but it does action any paragraph numbering or index entry noting that it comes across in the body of the .I line. It could therefore be used to reset a paragraph number element, or to write a special phrase to the index document for indexing.

1)

.C Followed by the print-time visible equivalents for special effects, in the order:

1. Escape	$
2. Suppress Line Feed	~
3. CTRL	^
4. Escape Space (pounds)	#
5. Escape \ (double underline)	=
6. Space	@
7. Paragraph Numbering	!
8. Indexing	|

Any of the above may be redefined or alternatively, they can be disabled by entering a '.' in the appropriate position in the sequence following the .C␣.

AUTOMATIC PARAGRAPH NUMBERING

LEX-11 provides for automatic paragraph numbering at print time. This feature is invoked by means of a special character embedded in the text, the normal default being exclamation mark (!), which may be altered as described above. The way you specify the paragraph numbering you want is by using a form of picture representation best explained by examples:-

To obtain paragraph numbering like this	Use
1.1.1	!pp=1.q=1.r=1!
1.1.2	!pp.q.r+1!
1.1.3	!pp.q.r+1!
1.2.1	!pp.q+1.r=1!
1.2.2	!pp.q.r+1!

The letters p,q,r,s,t,u,v,w,x,y,z may be used to denote separate parts of the paragraph number, and the number of p's, q's etc to denote how big you wish to allow the part of the paragraph number to be. For example, one p will allow for numbers 1-9, two p's, as in the example above, allows 1-99 etc. If the paragraph number part is only one character long, you may define it to start with a letter, e.g. q=A, which will generate the letters A,B,C,D for successive occurrences of q+1. If the usage of paragraph numbering for a paragraph is exactly the same as the preceding paragraph, as in example 1.1.3 above, you may denote 'use same as above' by a string of as many !!!!s as you wish. In this case you could use five !s, to keep the spacing in the document the same as the printed output, i.e 1.1.3 and !!!!! occupy the same number of spaces.

The 'save index entry' character, |, may be used to indicate that the next word or phrase is required to be written to an index document along with the current page number. When a phrase rather than a word is required as an index entry, use the @ character to hold the phrase together instead of spaces. The index document has the same name as the document being printed, but with the extension defined in **TEXT in the position for index document extension. Also you must define the length and background contents of an index entry line in **TEXT in the field provided (see Technical Guide). The two extra **TEXT fields are the second and third beyond the last printer option, e.g. :-

```
[**TEXT    Licence No. 0001 For ACE Microsystems Ltd
.BAK\.LTR\}~^#
Which Printer (1) Slow  (2) LP: (3) Spool to a file !
176504A\LP:\ Spool File Name ! \
.NDX\. . . . . . . . . . . . . . . . . . . . . . . . . . .\
5\WARNING. System File is nearly full^\Type of V D U = \VT52\T\SY:
```

EDIT TIME PAGINATION

Automatic print-time pagination of long documents can give rise to undesired page breaks, which are time consuming to correct. To circumvent this, an edit time feature is available to paginate a document prior to it being printed. Pagination should always be left until the whole document is ready to print, since any insertion, deletion, or movement of text usually alters all page breaks further on in the document.

To enable edit-time pagination, there is a distinction between 'soft' and 'hard' page breaks. A 'hard' page break is one which is always required at the same point, despite any future rearrangement of text, such as the start of a new chapter. This is denoted by a line starting .P A 'soft' page break is one which is only made necessary by not being able to fit text on a page. This type of page break is indicated by a line starting .PP

The Next Page Function 1) (ESC P) may be used during edit, to insert a new soft page break (.PP line) at the place in the document where the automatic print-time pagination would put it. This depends on the number of lines to print per page, held with the document printing details for the particular document type being edited. When you execute the NEXT-PAGE function, LEX-11 looks back for the previous .P or .PP line, and counts forward NN lines, where NN is the number of lines to print per page from the document printing details. When it is counting, it doesn't count rulers, lines ending with the suppress line feed character (~), or control lines(.C,.T,.F etc). If it can't find a . P or .PP line within NN lines of the current line, it bleeps, and if it finds a hard .P line below the current line it stops on the .P line.

During it's downward search, if it comes across any .PP lines already in the document, it deletes them. When it gets down a whole page, it inserts a new '.PP' line at the desired point, and puts a pseudo page number in it. This is a pseudo page number, and not necessarily the actual page number, because of the ability to merge documents at print-time, and the ability to start page numbering anywhere when printing. It also inserts the pseudo page number in any .P lines it may come across which cause it to halt.

You may CUT-AND-PASTE the .PP line to move it to a more desirable position, being careful not to move it too many lines down, in case the previous page won't fit on the paper. When you have relocated the page break where you would like it, you position the cursor on or below the . PP line and use ESC P again to get you to the end of the next page and insert the next page break. It inserts a .PP line like this:

```
.PP 0123==================================================================
```

Where 0123 is the pseudo page number. You may make use of the pseudo page number in a 'Find' operation, to get you to the desired page when editing the document

1)

DOCUMENT FORMATS - STORING DETAILS

The production of documents/letters which are typed regularly, always with the same layout, can be made easier by pre-setting the rulers, keystores and printing details which relate to them.

The Main Menu contains a Document Printing Details option which displays the following format which has been set up for this purpose. It is a questionnaire which makes use of protected-screen mode - this means that the cursor moves only on to the underlined parts of the screen where the details should be entered.

The upper half of the format relates to rulers and keystores which are used whilst typing the document, the lower to your instructions to LEX-11 for printing the document. You will see that up to 5 rulers can be set, to allow for tab settings and centering etc., and up to 9 keystores for such things as letter salutations, frequently-used phrases or words, and sequences of control characters.

```
Format Details for [*._______ documents.
Rulers 1 to 5:-
1...5...10...15...20...25...30...35...40...45...50...55...60...65...70...75...80
________________________________________________________________________________
________________________________________________________________________________
________________________________________________________________________________
________________________________________________________________________________
________________________________________________________________________________
Abbreviations:-
1=______________________________________________________________________________
2=______________________________________________________________________________
3=______________________________________________________________________________
4=______________________________________5=______________________________________
6=______________________________________7=______________________________________
8=______________________________________9=______________________________________

                 ------------------------  +
Enter        +   |<-__->Left margin.     |  |        _
required     |   |      Enter number     |  |        ____
lines to     |   |      of spaces        |  |        Enter total lines
print per    __  |      between left     |  __  <-   per page, or FF if
page         |   |      hand margin and  |  |        printer set to form feed
             +   |      edge of paper    |  |
                 ------------------------  +        Write Record _
```

When the blank format has been recalled, the cursor will be positioned on the first space after the square bracket and dot, i.e. [*._____. Enter a three-letter extension, such as LTR, DOC, REP, etc.

Use the extension to identify the type of document for which you are setting up details, e.g. . LTR for letters. Typical extensions are:

.LTR	letters	.DOC	documents
.REP	reports	.INV	invoices
.QUO	quotations		

Completely fill all the ruler lines with F,J,L,R,T,C,M or # and dots (any one of the five lines left unset will result in the error message 'Invalid Ruler' appearing in a document given that extension). Use carriage returns to move to the keystore and set up just those required, finishing each string of text with an underline character (this is a terminator required by LEX-11 to enable it to store the keystores in the least space possible).

The printing details are as follows:

```
                 ------------------------  +        _
Enter        +  |<-__->Left margin.     |  |        ____
required     |  |      Enter number     |  |
lines to     |  |      of spaces        |  |        Enter total lines
print per    __ |      between left     |  __  <-   per page, or FF if
page         |  |      hand margin and  |  |        printer set to form feed
             +  |      edge of paper    |  |
                 ------------------------  +       Write Record _
```

Left margin - this is where you want the left margin to be positioned on the paper when printing out your document (bear in mind that if you want the left margin set, say, in the middle of the page, you would need to set your rulers for short lines so that the printing does not go off the sheet)

Required lines to print per page 1) - refers to the point at which the printing should finish down the page, e.g. 57

Total lines per page, or FF if printer set to form feed - refers to the total number of lines available on the sheet, so that when printing out multi-page documents or a mass mailing, the printer will throw to the same place on each subsequent sheet, e.g. 66

When all your details have been entered, position the cursor on 'Write Record _' (using CTRL L) and press ESC]C. The details will disappear from the screen as the cursor moves through the record.

Any of the details entered in the format can be changed at any time, by selecting the Document Printing Details option again, typing in the extension name, then pressing ESC]R to read the record. The details previously set up are recalled, the changes can be made, then the cursor is positioned on 'Write Record _' and ESC]U pressed to update the record.

KEYSTORES

This is a means of storing up to 78 characters for immediate recall at any point when typing a document, by pressing one or two characters. It can therefore be used for storing frequently-used words or phrases, such as letter salutations, or a far more powerful use is for programming, i.e. the storage of command strings in the form of visible equivalents.

1)

SETTING KEYSTORES

There are ten keystores available.

Press ESCS1 and LEX-11 displays 1= on the current line at the extreme left of the screen (over the top of any existing text - the existing text is not affected by this display), leaving the cursor positioned in the space following the equals sign. Type in the text, finish with carriage return and the 1=..... will disappear from the screen and be temporarily stored as keystore 1 (and the existing text will reappear intact).

READING KEYSTORES

The keystores are recalled by positioning the cursor where you want the text to occur and pressing ESCn (n being any number from 0 to 9). The text will be recalled under the ruler setting in use in the current document.

'FIND' KEYSTORE

This keystore is used to find characters or strings of characters; either to move quickly to a particular point in a document you wish to edit or to find a string you want to change.

Press ESC F and then type in the string you require followed by carriage return. The cursor will move straight to the string if it is already displayed on the screen, or the screen will blank out, a message 'Searching for ...?????...' will appear and then the line containing the string will appear on the bottom of the screen. (If the string is not there, the screen will display 'Searching for ...?????... String not found' and return the cursor to the beginning of the document).

This string is held in the 'Find' keystore throughout the editing session until any other string is entered. Each time you press ESCF the string associated with it will temporarily appear on the top of text at the cursor point but will disappear when the carriage return key is pressed, leaving the original text in place.

ALTERNATIVE FIND GIVING CONTEXT

The command ESC G (GET), can be used as an alternative to ESC F (FIND), to find a string in the text. Unlike FIND, which blanks the screen while searching, GET works by scrolling through the document until it finds the string, and then positions the cursor on the string. This gives you the context above the found string.

STANDARD PARAGRAPHS

Where standard text or paragraphs are used regularly, it is desirable to be able to keep them on a file ready for use at any point within a document, without having to retype them each time. It may also be necessary to store this standard text with pause points, to allow insertion (when the text is recalled) of words or lines relevant to the particular document being created.

Standard paragraphs can be stored ready for recall into letters or documents in any combination.

CREATING STANDARD PARAGRAPHS

A standard paragraph may be written to a memory file from an existing file but we will assume it has to be created.

Select Option 1 in the System File menu. The screen blanks out and the cursor is positioned at the top left of an empty screen ready for input.

The text must be given a key, starting with open square bracket, of up to 10 characters. On the following line, type the text (which must be no more than one screenful, as both the opening and closing brackets must be present on the screen when the record is written away), then finish by positioning the cursor on the left of the screen on the line directly below the text and pressing ESC>C.

(The angle bracket used to write the record away means that the text is written away without carriage returns and can therefore be recalled in a document under any ruler setting related to the document).

Use the Exit key to return to the Menu when you have finished creating text.

To store text with a pause point, type ! at that point. When recalled, this displays a question mark at which point the display halts and allows you to type in as much extra text as you wish, and a carriage return continues the recall of the stored text.

MODIFYING STANDARD PARAGRAPHS

To change a standard paragraph, recall the record by typing [para1 ESC]R. This displays the text with the key; make your changes, then position the cursor on the left of the screen on the line below the text and type ESC>U.

Use ESC E to return to the Menu.

Function	Control keys	Visible Equivalent
Pressing the control key together with another character enters one of the ASCII control characters.	Ctrl	'
Pressing the escape key indicates that the following character(s) have a special meaning. These short strings are called 'escape sequences'.	ESC	$
Move cursor UP a line	Up arrow	'U
Move cursor DOWN a line	Down arrow or linefeed	'J
Move cursor RIGHT one space	Right arrow	'R or }
Move cursor LEFT one space	Left arrow	'H or {
DELETE last character typed	Delete or rubout key	
Cursor to next TAB position	Tab	'I or |
Cursor to start of NEXT LINE	Return	'M or \
CHANGE CASE from cursor position to end of word	Ctrl and K	'K
Move to END OF typing LINE	Ctrl and G	'G
Move FORWARD a word	Ctrl and F	'F
Move BACK a word	Ctrl and B	'B
INSERT A SPACE in existing text (say, between two characters)	Ctrl and N (PF3 on VT-100) (where margin or tab stops should be observed) (use Ctrl and E where margin and tab stops should be overridden)	'N 'E
DELETE A character or space in existing text	Ctrl and P (PF4 on VT-100) (where margin or tab stops should be observed) (use Ctrl and D where margin and tab stops should be overriden)	'P 'D
INSERT a blank LINE (inserts blank line at cursor position, moving all subsequent text down by one line)	Ctrl and A (PF1 on VT-100)	'A
DELETE a LINE (deletes line where cursor is positioned moving all subsequent text up one line)	Ctrl and X Ctrl and B (under RSX op.sys) (PF2 on VT-100)	'X
'UNDELETE' a LINE	ESC. Ctrl and X	

Function	Control keys	Visible Equivalent
DELETE REMAINDER of line (deletes from cursor to end of line)	Ctrl and V	'V
DELETE WORD	Ctrl and W	'W
DISPLAY 1 screenful of text (displays screenful from cursor position - equivalent to 23 line feeds)	Ctrl and L	'L
TOP of screen (moves cursor to top of screen, then use Up arrow to move further back or ESCV to return to beginning of the document)	Ctrl and T	'T
COPY from line above (copies character-by-character from line directly above)	Ctrl and Y	'Y
INSERT TEXT (put cursor at point where text is to be added. As typing begins, text to right of cursor is pushed along and onto new lines)	ESC followed by I	$I
REJUSTIFY TEXT (and also exit insert mode if in use). Tidies up a paragraph after insert mode or, together with a J.....M. ruler, redistributes text to a straight righthand margin	ESC followed by J	$J
EXIT INSERT MODE (does not rejustify paragraph)	ESC followed by -I	$-I
BREAK text for NEW LINE (moves text following cursor position to new line. Insert line for a new paragraph)	ESC followed by LineFeed	$'J
CENTER TEXT (centers text between two tab stops without using a C.....M. ruler)	ESC followed by @	$@
CURRENT DATE in full	ESC followed by Y	$Y
CURRENT DATE in short	ESC followed by T	$T
NEXT PAGE Edit-time command to paginate a document (= insert "soft" page-break)	esc followed by p (Let op: kleine letter!)	$p

Function	Control keys	Visible Equivalent
FIND text (type ESC F followed by word or phrase you wish to find, press return and cursor moves to the specified text)	ESC followed by F	$F
GET text (alternative method to find a string in the text. Type ESC G followed by word or phrase you wish to find, press return and cursor scrolls through the document to the specified text)	ESC followed by G	$G
HELP messages	ESC followed by H	$H
NEXT RECORD - obtain next highest key in the memory file	ESC followed by N	$N
KEYSTORE setting	ESC followed by Sn	$Sn (n = number 0 - 9)
KEYSTORE recall	ESC followed by n	$n
VERTICAL character entry	ESC followed by \	$\
EXIT VERTICAL character entry	ESC followed by \	$\
Cut and paste functions		
MARK TEXT	ESC followed by (	$(
CUT AND LEAVE TEXT	ESC followed by)L	$)L
CUT AND BLANK TEXT	ESC followed by)B	$)B
CUT AND SQUEEZE TEXT	ESC followed by)S	$)S
Cut and leave + store in keystore n	Esc followed by)nL	$)nL
PASTE AND OVERLAY TEXT	ESC followed by *O	$*O
PASTE AND INSERT TEXT	ESC followed by *I	$*I
PASTE AND 'ELBOW' TEXT	ESC followed by *E	$*E
MERGE OPEN - merge a document into document currently being edited	ESC followed by MO	$MO
MERGE ADVANCE - advance to string in document to be merged	ESC followed by MA	$MA
MERGE UNTIL - copies lines from merge document until string is found	ESC followed by MU	$MU

Function	Control keys	Visible Equivalent
MERGE TO END - merges any remaining lines from the merge document into the current document	ESC followed by ME	$ME
MERGE INSERT - inserts one line from the merge document into the current document	ESC followed by MI	$MI
REPEAT function	ESC followed by X	$X
(type ESCX, no. of repeats and function to be executed and finish with Return, e.g. ESCX6. would give ..... To repeat indefinitely define no. of repeats as zero, e.g. ESCX0'J would repeat Line Feed until the end of input file)	opm.: "function to be executed" mag ook een reeks lex-11 kommando's zijn; het 'Repeat' kommando wordt afgesloten met <Return>.	
Enter CALCULATOR	ESC followed by +	$+
BEGINNING of document (re-edit) (exits, writes document away on disk and re-enters at beginning for further editing)	ESC followed by V	$V
EXIT EDIT or move back to Main Menu	ESC followed by E	$E
QUIT EDIT (exits without updating document)	ESC followed by Z	$Z
PRINT-time command to extend lines beyond 80 characters to width set on printer	ESC followed by &	$&
RULER control		(n = ruler no.0 - 9)
Display ruler no.?	ESC followed by Mn	$Mn
Use (no display) ruler no.?	ESC followed by Un	$Un
Write ruler as no.?	ESC followed by Wn	$Wn
SYSTEM record handling		
Enter a record name	[KKKKKKKKK	[
Create a new record	ESC followed by]C	$]C
Update an existing record	ESC followed by]U	$]U
Read an existing record	ESC followed by]R	$]R
Use system record and translate any visible equivalents	]	]

Function	Control keys	Visible Equivalent
Store system record without carriage returns (as with Standard Paragraphs):		
Create a new record	ESC followed by >C	$>C
Update an existing record	ESC followed by >U	$>U
Delete an existing system record	ESC]K (after key)	$]K
Instruction to LEX-11 to translate text stored within double quotes literally upon recall or withhold execution of escape sequence until later recall	" "	
Instruction to LEX-11 to translate next character literally upon recall rather than as a visible equivalent to be executed, e.g. a ! stored within a standard paragraph will be returned as a pause point rather than an exclamation mark unless preceded by @ (i.e. No way@!)	@	@
Set background - set the screen into 'background' mode. The actual mode used for any particular terminal can be defined by the user, eg VT100 can be set into its normal mode (white on black)	ESC followed by SB	$SB
Unset background - set the screen into a 'foreground' mode. The actual screen mode used on a particular terminal can be defined by the user, eg set VT100 into reverse, i.e. black on white	ESC followed by UB	$UB
Clear background - clear screen from current cursor position to end. When a terminal with foreground/background feature is being used, clear background only.	ESC followed by CB	$CB
Clear foreground - clear the screen from cursor position to end. If the terminal has foreground/background feature, clear foreground only.	ESC followed by CF	$CF

Function	Control keys	Visible Equivalent
Set protect - the Set Protect Mode restricts the cursor to 'unprotected' areas of the screen which have previously been indicated by strings of underline characters	ESC followed by SP	$SP
Unset protect - Unset the Protect Mode restriction set by the ESCSP command	ESC followed by UP	$UP
Clear protect - Unsets protection set by the ESCSP command and clears them to blanks. Also clears unprotected underlines to blanks	ESC followed by CP	$CP
Shush Mode - disable display on the screen of characters entered. The cursor moves but there is no display	ESC followed by SH	$SH
Squash Character - squash out repeated character, i.e. ESCSQc would define c as the current 'squash character' and multiple occurrences of c in the system record would be stored in a single byte	ESC followed by SQ	$SQ
Open Document - create a document when in option 1 of the system file menu. Type ESCOD followed by document name and Return	ESC followed by OD (bij sommige terminals verwangen door $OF)	$OD
Send to Video - sends string to screen without putting into screen buffer. Type ESCSV followed by string which should start and end with a delimiter, e.g. ESCSV.string.	ESC followed by SV	$SV
PAUSE point for entry of data when a system file is recalled in use (i.e. with])	Embed ! within a system file record (such as a standard paragraph) at point where entry of variable text is required	!

Function	Control keys	Visible Equivalent
Typed Instructions to be executed at Print Time		
Instruction to move to next sheet or pause in print	.P (type this in document at the very left of screen at point where new page is required)	
TITLING, automatic reproduction of a title on each new page at print-time	.Tn,n (type this in document at the very left of screen at the top of the document)	
FOOTERS, automatic reproduction of a footer on each new page at print-time	.F (type this in document somewhere through first screen - two lines are reserved for this, so even if only one is required leave a blank line)	
PRINT TIME SPECIAL EFFECTS (Let op "space" direct na de hoofdletter C ?)	.C Followed by the print-time visible equivalents for special effects, in the order:	
	1. ESCAPE	$
	2. Suppress Line Feed	~
	3. CNTRL	^
	4. ESCAPE SPACE (pounds)	#
	5. ESCAPE \ (double underline)	=
	6. SPACE	@
	7. Paragraph Numbering	!
	8. Indexing	|
VARIABLE LINE SPACING	.S n - where n equals one of the following: .5, 1, 1.5, 2, 2.5 or 3	
INFORMATION	.I followed by information e.g. to reset paragraph number element	